

HOME PLANTING FOR BOYS AND GIRLS

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This bulletin is intended for boys and girls who have already had some experience in gardening. Other Cornell Junior Extension garden bulletins discuss crops which are planted, cared for, and harvested all in one year, but the plants discussed in this bulletin grow for more than one year. Indeed, some of them often outlive the person who planted them. Since the results of the work will last for many years and will affect many other people beside the one who does the planting, careful plans should be made in advance.

All of these plants will probably be set rather near the house. That is why we call this a home-planting bulletin. The plants discussed may be classified as perennial vegetables, small fruits, and ornamentals. Most of this bulletin is devoted to the last two groups, but there are a few perennial vegetables that boys and girls may well help to establish on the home ground.

PERENNIAL VEGETABLES

Rhubarb

Rhubarb is a pleasant and healthful addition to the spring diet. It is grown usually from roots (figure 1). If you plant seeds, the resulting plants are likely not to be quite like the parent plant, often not so good. You may have a chance to get roots free from a neighbor who has good stock. If not, you can buy roots from a reliable seedsman. Victoria and Linnaeus are standard varieties.

Fertile soil and good cultivation are more important than the choice of variety, however. The roots should be set three or four inches deep and about three feet apart each way in soil that has been well fertilized, preferably with stable manure. If the soil is very rich, it may be well to allow more space between rows. The soil should be well drained. Planting is usually done in the spring. After the rhubarb is planted, it is necessary only to keep down the weeds and to give it a good top-dressing of manure every fall.

If the family is fond of rhubarb, it is not hard to have it during late fall, winter, and early spring from roots taken up in the fall, allowed to freeze, and then spread on a cellar or basement floor and covered with soil to a depth of about two inches. The soil should be worked down well between the roots. It should be kept moist but not too wet. Better leaf stems are produced in the dark than in the light (figure 2). Be sure to



FIGURE 1. DIVIDING RHUBARB ROOTS TO PRODUCE NEW PLANTS

freeze the roots before bringing them in. Otherwise, the yield will be small. The best temperature for forcing is around 50° or 55° F.

The roots used for forcing should have been growing in the field four or five years. Older roots are not desirable. After forcing they may be divided and returned to the field if the forcing is stopped as soon as the leaves begin to become smaller and before the roots are entirely exhausted.

Rhubarb forced thus out of season sells for from \$10 to \$15 a hundred pounds, while the outdoor crop in its natural season brings no more than \$5 a hundred pounds, sometimes as low as \$1. Perhaps you may be able to produce some for sale.

Asparagus

If we could plant asparagus seed in the spring and have asparagus to eat the same summer, we would all have it. But since roots must be bought or grown and then set two years before we can expect a crop, many neglect to plant this vegetable. Once started, however, it grows year after year with no more work, perhaps less, than is required for annual crops.



FIGURE 2. THE LEAF ON THE LEFT GREW IN THE LIGHT; THE LEAF ON THE RIGHT GREW IN THE DARK

Most families would need at least fifty roots, and seventy-five or one hundred might well be planted to give a surplus for canning and perhaps a little for sale. Get a good variety. One of the Washington varieties, either Mary Washington or Martha Washington, will be satisfactory. Get one-year roots from a reliable company. There is no advantage in planting two-year roots and there is likely to be more injury to the plant in moving it.

Asparagus plants should be set at least eighteen inches apart in the row, better two feet. Rows should be four feet apart at least. In very heavy soils the crown should be set eight or ten inches deep; in lighter soils, the depth is increased to twelve inches or more. However, the plants should not be buried deeply at first.

The method of planting is as follows: First dig a trench about six inches deeper than the roots are to be set, that is from fourteen to eighteen inches. Fill the lower six inches with good topsoil mixed with well-rotted manure. Set the plants on this, covering them only an inch or two at first. As the plants grow during the summer, work more soil into the trench about them until the soil is level once more.

No asparagus is to be cut the first year, of course, nor the second. The third year, if the plants have made a good growth the first two years, you may cut for three weeks. In subsequent years the cutting season is about eight weeks.

The weeds should be kept out and the asparagus fertilized every year. Stable manure is good. A complete commercial fertilizer may be used instead at the rate of one pound to every twenty square feet.

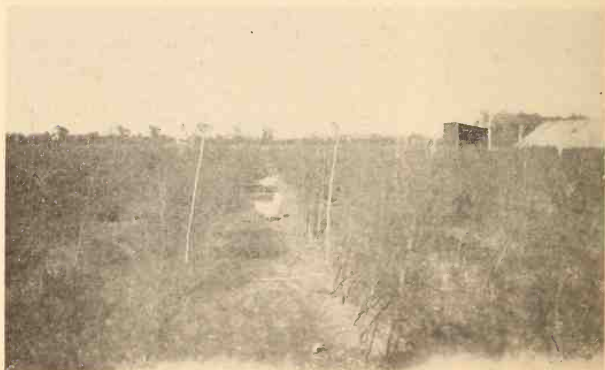


FIGURE 3. BEETLE, BEETLE, WHO WILL GET THE BEETLE?

Asparagus beetles are pretty sure to appear. Keeping the asparagus cut in the spring may starve them out. Hens and ducks will eat them (figure 3). The vines may be sprayed with a lead-arsenate solution (two teaspoonfuls of the powder to one gallon of water). If the larvae are brushed off during a warm sunny day, they are likely to perish before they can crawl back.

Other perennial vegetables

Asparagus and rhubarb are our most important perennial vegetables. but in this class there are several minor crops, such as sage, horse-radish, and winter onions. The perennial onion most often grown is the tree or top onion which is grown from sets produced every summer in clusters on stalks about eighteen inches high. These sets are planted in late summer or early fall and produce green onions for use the following spring. These sets are borne in great abundance, and, if any one in the neighborhood is growing them, you will be able to get enough to start a planting. They are also sold in the fall by some of the seed houses.

BERRIES

It is not the purpose in these few pages to discuss all the details of berry growing; rather the object is to provide a few clear-cut directions which will be helpful to a boy or a girl in the planting and early care of strawberries and raspberries. Those whose interest prompts them to make a further study of these fruit crops are referred to Cornell extension bulletins pertaining to strawberries, raspberries, and home fruit planting in general.¹ These bulletins should be procured by all who carry their project beyond the fruiting year.

Age of bearing and yield

One of the first questions you will ask about berry growing is, "How long after planting will it be before the fruit can be picked?" For those who wish the very quickest results the answer must be disappointing. A distinguishing feature of fruit plants is the fact that they live longer than one year and do not bear a true crop until the second growing season or later.

Strawberries produce a full crop the summer after planting and with good care will often continue to produce profitably for two or three years more. However, if insects or diseases are troublesome or the patch becomes foul with grass or weeds, it is usually better to plant a new patch after harvesting one crop.

¹ Strawberry growing. By G. W. Peck. Cornell Ext. Bul. 211. 1931.
Raspberries, blackberries, and dewberries. By Joseph Oskamp. Cornell Ext. Bul. 64. 1923.
Growing fruit for home use. By Joseph Oskamp. Cornell Ext. Bul. 199. 1930.

Raspberries are even tardier in coming into bearing than are strawberries, and, while they will set some fruit the second summer after planting, it is not until the third season that a crop will be produced. Usually, if well cared for, four or five additional crops may be harvested before the patch becomes unproductive thru the accumulative effect of disease, grass and weeds in the row, and other agencies.

If you grow berries, you would undoubtedly like to supply your mother with fruit needed for the family and have a few berries left over to sell to the neighbors. This brings up the question of the number of plants to set. First, find how many berries can be used at home. Then decide how many you wish to sell to neighbors or on the local market. Having thus arrived at the number of quarts that you think you want to produce, it is now necessary to know something of the yield of the plants.

Strawberries when grown to the matted row will, on the average, produce about one pint of berries for each mother plant with its runners. Raspberries will produce from one quart to a quart and a half for each plant set out. This will enable you to arrive at something near the number of plants needed. Of course, the yield is dependent upon so many things, such as the soil and the rainfall, that it is impossible to figure the yield beforehand. But this basis of calculation will be better than a guess.



FIGURE 4. FARM BOYS AND GIRLS SETTING BERRY PLANTS

They work in crews of two. A hole is made by thrusting a spade into the ground, while a helper drops the plant into the hole. The spade is again thrust into the ground and the earth pressed against the roots of the plant.

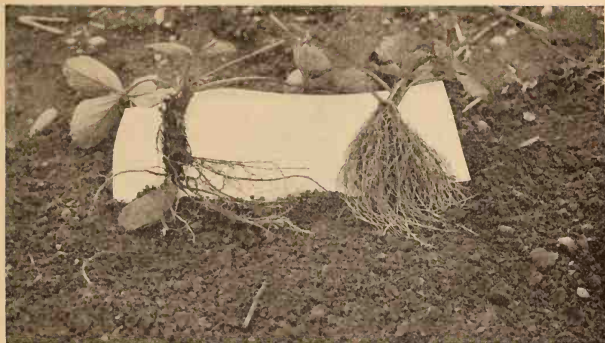


FIGURE 5. SELECTING STRAWBERRY PLANTS FOR TRANSPLANTING

At the right is a new plant which grew last summer, showing a small, green crown and well-developed, white fibrous roots — the kind to set. At the left is an old plant with a large, blackish crown and dark coarse roots — the kind not to set

Varieties

It is not only necessary to know the number of plants to purchase but also the variety, as some varieties are much better than others. This is a matter that should be thought of well in advance of the planting season so that suitable plants may be ordered from a reliable nurseryman. Where there is a healthy strawberry bed in the neighborhood, it may sometimes be satisfactory to obtain the plants for transplanting from that source. In such a case, the plants should be carefully selected, using only the well-developed young runner plants that grew the past summer (figure 5).

Owing to the prevalence of diseases in raspberries, it will generally be better to purchase plants from a reliable nurseryman, rather than get them from an old patch.

The varieties that the New York State College of Agriculture would recommend are: Strawberries, Howard No. 17, ripens early; William Belt, ripens medium late. Red raspberries, Herbert, ripens midseason. Purple raspberries, Columbian, ripens late. Black raspberries, Plum Farmer, ripens medium early.

Soil

A congenial soil is of no small importance in the growing of berries. While they will grow on a variety of soils, yet, for their best success, the lighter, warmer soils, such as those that contain considerable sand, are to be preferred. Most of the commercial plantations are found on soil types varying from gravelly to sandy and clay loams, with the gravelly

and sandy loams predominating. Wet soils, or tight, stiff clays that are difficult to work, are undesirable. The lighter soils are easy to manage and, if well supplied with humus, should prove highly satisfactory.

Preparation of the soil

If there is one thing demanding more attention than another in the growing of small fruits, it is the supply of soil moisture. The moisture-holding capacity of the soil is largely dependent on its physical condition and on the amount of humus, or decaying vegetable matter, present. It is desirable, then, to work into the soil before planting just as much humus, in the form of green crops and barnyard manure, as is possible. An application of from ten to fifteen loads of manure to the acre could be advantageously made. A good method of preparing the ground is to plow under one or more rank-growing catch crops, such as buckwheat, barley, or rye. Oats might be seeded to clover, and the clover sod turned under in the spring and planted to corn, tomatoes, or potatoes. A cultivated crop prior to setting the berries is an aid in eradicating weeds and in fitting the land. Strawberries should never follow sod land, which is generally infested with the white grubs that feed on the roots of the strawberry.

Deep plowing will increase the efficiency of the program just given. After plowing, the soil should be worked until fine and mellow before the plants are set.

Distance of planting

For the strawberry varieties here listed a distance of two feet between plants in the row and three and a half feet between rows is suggested. It would thus require 6223 plants to set an acre of ground. A good stand of plants to form a matted row should result by fall.

Raspberries may be set three feet apart in rows seven feet distant. At this distance it would take 2075 plants to the acre.

Setting the plants

The best time to plant is in the spring as soon as the ground will work to good advantage. The rows can be laid off with a wheel or drag marker that any handy boy can make.

If the plants arrive before the ground is ready, they should be set out temporarily, close together, in a favorable spot. This is called *heeling-in*. The earth should be well packed against the roots.

Previous to setting, the strawberry plants may have their longest roots cut back even with the main root system and all but two or three leaves removed (figure 6).

Raspberry plants may have their roots very lightly cut back and from four to six inches of the top may be left.



FIGURE 6. WELL-GROWN STRAWBERRY PLANTS SUITABLE FOR SETTING

The plant at the right is as dug from the nursery; at the left, trimmed, ready to set

The spade method with two working together is commonly used in planting small fruits. After the ground is marked off, the plants are kept moist in a bucket or a sack and are taken to the field. A spade is thrust into the ground at the intersection of the marks, drawn toward the operator and removed, while a helper drops the plant into the hole thus made. The spade is again thrust into the ground and the earth firmly pressed against the roots of the plant (figure 4).

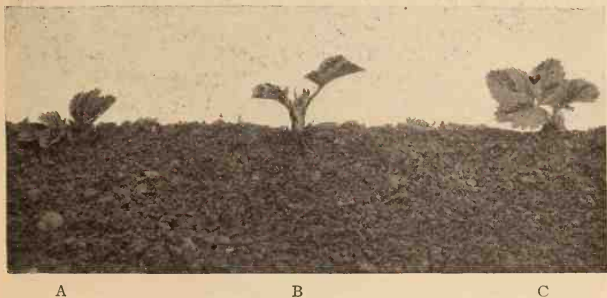


FIGURE 7. THE CORRECT DEPTH TO SET STRAWBERRY PLANTS

A, set too deeply; B set too high; C, set at right depth

In planting strawberries, the depth is important. Care should be taken that the terminal growing point is just above the level of the ground (figure 7). In heavy soils the terminal bud is likely to rot if planted too deep, and, if planted too shallow, the roots may dry out.

Raspberry plants should be set one or two inches deeper than they originally grew in the nursery.

Spring care of the strawberry bed

Soon after the plants are set they should be cultivated between the rows and hand hoed in the row and around the plants. Care should be taken, however, not to disturb the runners which soon begin to grow from the parent plants. These runners are allowed to remain and take root, so as to form what is commonly called a *matted row* (figure 8). The matted row is suggested as the most practical system of training, altho some may prefer to grow their strawberries in hills, keeping all runners cut off. If the season is favorable, runners will form very rapidly to fill up the matted row.

When the rows are spaced three and a half feet apart, there is plenty of room to develop a matted row from eighteen inches to two feet wide. Hence, as the summer advances the cultivated strip between the rows becomes narrower and narrower until the desired width is occupied by runner plants. All the runners that set outside of this area are hoed out. Sometimes too many runners may set in the row; then, they should be thinned to five or six inches apart.

It is very important during the first spring to keep the blossoms pinched off of the plants so that runner formation may be encouraged.



FIGURE 8. STRAWBERRY RUNNERS FORMING FROM TWO MOTHER PLANTS
Many runners are allowed to grow and develop a matted row, after which they are kept cut out

Cultivation

Frequent cultivation during the first summer is necessary to insure a vigorous growth of berry plants. The ground should be kept clear of weeds, for they are very difficult to eradicate, especially in the strawberry bed, when they have once gained a foothold.

Strawberries are not cultivated after the first season, since mulching with straw, leaves, or other weed-free material of this nature takes its place.

Cultivation of raspberries should begin each spring as soon as the ground is in condition to work, and should be repeated until the picking season. The nature of the soil will largely determine whether the land should be plowed in the spring or worked up with a disk. It is usually desirable to plow the heavier soils. A good dressing of manure applied to the patch each spring would be desirable. Tillage should be shallow at all times. Hand hoeing will be necessary now and then to keep the ground between the plants clear of weeds and grass.

Red raspberries send up suckers very freely from the roots, and cultivation should be such that the rows are kept narrowed to a foot in width.

Mulching strawberries

On clay soils mulching with straw, leaves, or other fine material protects the plants from the extremes of alternate freezing and thawing and reduces the loss from heaving out of the ground. The mulch is equally important, however, in conserving moisture during the fruiting season, in smothering weed growth, and in keeping the berries free from dirt (figure 9).

The mulch is applied soon after the ground becomes frozen in the fall, generally early in December, and is put on about two or three inches deep. As soon as growth starts in the spring, the mulch is lifted with a fork from places where it is too heavy for the plants to get thru, and is put into the spaces between the rows. The straw settles considerably during the winter so that often there are only a few places where it has to be moved.

Removing old raspberry canes

In pruning raspberries it must be borne in mind that the canes live but two summers. The first summer the young canes that come up from the roots are called *shoots*. It is these shoots that are summer pinched; they bear no fruit that year. As the summer advances and the shoots complete their growth, they are called *canes*. The next spring it is from the buds on these canes that the fruitful growth originates.

After the crop is matured, these old canes wither and die. Being of

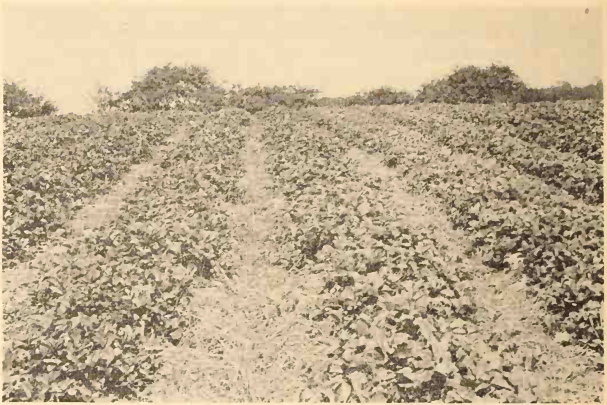


FIGURE 9. A WELL-MULCHED STRAWBERRY BED

The mulch is important not only in winter, but during the fruiting season in conserving moisture, in smothering weed growth, and in keeping the berries free from dirt

no further value and tending to spread disease to the new shoots, the old canes are then cut off close to the ground, gathered up, and burned. A pair of long handled lopping shears with a hooked blade are useful in removing the old canes.

Summer pruning of raspberries

With black and purple raspberries, summer pinching of the new shoots is practiced. The terminal ends of new shoots are pinched off when they have reached a height of about two feet (figure 10). The pinching back is usually done early in June, and checks the immediate elongation of the shoots, forcing the buds along the main stem to push out and form lateral branches. Plants so treated are much lower and more self-supporting. This kind of pruning is almost always employed where trellises are not used. The pinching keeps the bushes more compact and easier to tend, and to this extent takes the place of artificial support.

Red raspberries are not summer pinched because, if summer pinched, they send out only weak, spindling laterals, which are less desirable than the straight, vigorous, well-matured canes. Then, too, pinching seems to further encourage the growth of suckers in red raspberries.

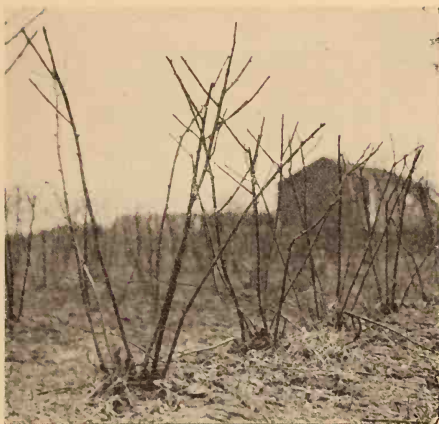


FIGURE 10. SPACING OF PLANTS AND METHOD OF PRUNING
TYPICAL OF BLACK AND PURPLE RASPBERRIES

The upright shoots were pinched back last June to two feet high, causing the stocky lateral branches to develop. These have just been cut back (April 20) to 5 or 6 inches long. All weak canes have been cut out

Regular dormant pruning of raspberries

The regular dormant pruning is best given in the spring of the year, after all danger of winter injury is past. Then one is in a position to prune more intelligently, knowing that the canes will not be subjected to winter killing.

The lateral branches that have been induced to grow on black and purple raspberries, as the result of summer pinching, are cut back in the spring to five or six inches in length. The weak spindling canes are also thinned out, leaving from four to eight of the strongest canes to each plant.

Red raspberries are commonly cut back to three or four feet in height, the weaker canes being cut the more severely (figure 11). The canes are thinned to from four to eight in the hill, or, where grown in the hedgerow, the canes should be spaced about eight inches apart. The narrow hedgerow, not more than a foot wide, is to be greatly preferred to the wide hedgerow, on account of convenience in management.

Harvesting

Berries are very perishable and need to be carefully handled, especially the red raspberry. Picking should be done frequently, probably every



FIGURE 11. A RED RASPBERRY PATCH IN EARLY SPRING

The long, unbranched canes have been cut back to 3 or 4 feet high and the weak, spindling canes have been cut out

other day at the height of the season, to insure that as large a proportion of berries as possible are of the right state of ripeness. The berries should be firm, but not green nor yet overripe; and above all, they should not be picked wet. They should be placed at once without further handling in the container in which they are to be marketed. This requires some grading on the part of the picker, and all overripe berries or those injured in any way should either be discarded or kept separate.

The 32-quart American crate with the split basket is the most popular type of package. Its advantages are convenient size, better ventilation of the fruit, and less bruising. For the more perishable red raspberries, the pint box is in favor. The berries carry better on account of the reduced weight of fruit in each container, and better prices can generally be realized, for the pints usually sell for considerably more than half as much as the quarts.

Diseases and insect pests

The matter of good sanitation in the berry patch is very important. Some of the most serious diseases and insect pests of raspberries cannot be controlled by spraying. Starting with disease-free stock, cutting out and burning the old canes immediately after harvest, and keeping the

patch well cultivated and free from weeds early in the season, all are measures in disease and pest control that are well worth practicing. Those whose berry patches are troubled with insects or diseases should write to the College for information.

LANDSCAPE IMPROVEMENT

Do you realize that everything in nature is beautiful! The tree; the bird that sings from its topmost bough; the bird's song, its nest; the wild shrubs by the little brook; the lilies and the cattails in the swamp; every flower of the field and fern of the glen—all things are beautiful. Why do you suppose the Great Creator has caused everything to be so lovely? Perhaps, because beautiful things inspire and uplift us; because they are restful and delightful to look upon, to smell, and to touch. Beauty is refreshing when we are tired. It cheers and encourages us when we are ill or discouraged. Beauty exists everywhere except (and unfortunately there is an exception) where men have travelled.

About the homes and working places of human beings, we frequently find ugly and unsightly conditions. Here, if brooks are allowed to remain they usually become open sewers. Their banks are littered with garbage, and only the ranker-growing weeds survive. The streets and the roads are too often dirty and ugly. Even the trees that may have been planted along them are stunted, broken, and unhappy in appearance; very different looking indeed from their cousins in the open country. Many of the lawns in front of the homes are untidy. The little plot that should be covered with a rich carpet of green grass is full of weeds, and bare places of dirt mar its attractiveness. A few shrubs may have been planted in the yard but these rarely appear rich and beautiful and they do not "dress up" the house and decorate it so that people speak of it as "a lovely and beautiful home." Many of the back yards are ugly places. There may be a tiny flower bed, a little vegetable garden, and a small grass plot, but their charm is entirely destroyed by rubbish and ashes.

New York is a beautiful State, for Nature has blessed her abundantly. We are now anxious to perfect her loveliness by making every individual home beautiful. This, eventually, will mean beautiful highways and beautiful communities.

Every boy and girl can have an important part in bringing this to pass. Each one has his or her own yard, and therein is the place to begin. Let us make our home yards beautiful! This will not be difficult, neither will it be costly, nor will it require a great deal of work, and it will reward us for our efforts in many delightful ways. First, how proud we will be of our results; and then, what fun it will be to exhibit them to our friends. In addition, our work may actually increase the value of

our home. But the greatest reward of all is the joy and the pleasure that will be ours as we work in the garden. The very plants will fill us with happiness and contentment, and planning, building, and caring for the garden will provide us supreme pleasure.

He is happiest who hath power to gather wisdom from a flower
And wake his heart in every hour to pleasant gratitude.

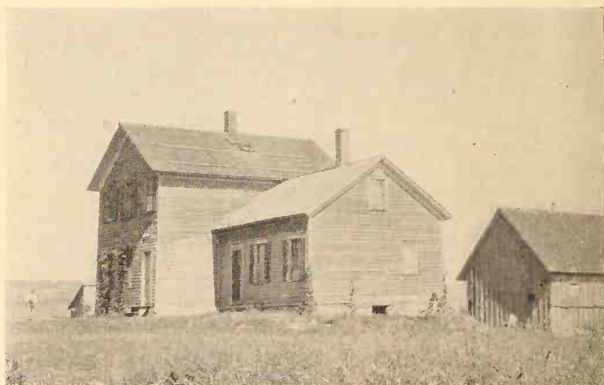


FIGURE 12. COULD YOU THINK OF THIS AS "HOME, SWEET HOME"?

So wrote the poet Wordsworth, and he is right. That happiness can be ours, and at the same time we accomplish a worth-while project in making our home yard more beautiful and more lovable.

Who can try?

Every boy and every girl without regard for age or the location of his or her home may have a share in this interesting work. The fact that we may not own the property is no valid reason why we should not make it lovely and keep it beautiful while we live there. Certainly, if we leave a rented property more attractive than it was when we first came, we then pass on to others better things than they might otherwise have had. Our efforts are twice blessed. "It blesseth him that gives and him that takes." We have worked not only for ourselves but for others as well. It is needed more for the little home than for the large estate and the mansion. Wealthy people pay well to have their grounds landscaped, but everything done about the home of the average wage earner must be done by the people themselves.

How much will it cost?

Most people seem to think that it costs a great deal of money to make the yard attractive. This is a mistaken idea. It would be an error for the average home owner to attempt to copy the extensive and expensive work of the rich man. Our homes are simple and should be landscaped in a very simple way. We may even grow our own trees, shrubs, vines,



FIGURE 13. HOW ABOUT THIS ONE?

and flower from cuttings and seeds. True, this takes a little longer but it will cost only a few cents at most, and we shall find much more pleasure and joy in growing our own plants.

Garden furnishings such as seats, lattice, bird baths, and even small pools for lilies and fish may be built from odds and ends by any boy or girl of normal ability. A few ordinary tools such as are found in almost every home are all that are necessary.

It is the purpose of this section of the bulletin to tell boys and girls how to do some of those things which will both provide them with entertainment and make their home yards more attractive.

Tree planting

Trees eventually give the greatest return for the trouble required in planting them. The selection of the places where they should be planted is a difficult matter, however, and a tree that you plant should be limited to the location of shade trees and street trees.

The commonest mistake made in placing trees is that of locating them so close together that when they are full grown they injure one another by the crowding of branches and produce too heavy shade on the lawns and street.

Shade trees

If shade is needed for the porch or grounds, plant a shade tree. Study carefully the exact place where you desire the shade. Watch the sun and note the spot on the ground whence a good tree would cast its shade upon



FIGURE 14. THE NORWAY MAPLE LENDS ITS GRACIOUS SHADE

the desired place. Do not think of the tree as a tiny sapling but remember that in a few years it will be tall and spreading. Mark with a stake the spot where the tree should stand.

Street trees

If there are no trees along the highway, then street trees may be planted. These are usually located either in the strip of grass between the sidewalk and the road or else a few feet back upon the lawn. A street tree should never be planted directly in front of the house unless it is needed in that position to shade the front porch. When planted exactly in front of a home, it spoils the attractive view of the house as seen by all who pass by. The best location for street trees is on either side of the house. They then form a green framework that affords an attractive setting for the building. Never plant street trees of any kind closer than forty feet apart. Set stakes to mark their locations. You are now ready to get your trees and plant them.

TREE PLANTING TABLE

Key number	Wide streets	Narrow streets	Decoration only	Lawn shade	Light shade	Heavy shade	Note.— It is against the New York State law to damage or remove the flowering dogwood. Purchase it from the local nursery. Stars indicate that the effect is unusually fine Copyright 1927. Joseph P. Porter		Scientific name		Common name	Flower	Season	Fall effect	Found wild in N. Y.	Distance apart to plant
							Height (feet)	Spread (feet)	Soil							
1	★	★	★	★	★	★	80-100	40-60	Normal	Sugar maple	<i>Acer saccharum</i>	Greenish-yellow	May	Red-orange*	★	40-50
2							40-60	40-50	Any	Norway maple	<i>Acer platanoides</i>	Yellow*	May	Green, yellow	★	40
3			★	★	★	★	30-60	40-50	Normal	Yellowwood	<i>Cladrastis lutea</i>	White*	June	Yellow	★	30
4			★	★	★	★	20-30	20-30	Light	Flowering dogwood	<i>Cornus florida</i>	White	May	Scarlet*	★	15
5		★	★	★	★	★	80-100	60-80	Light	Beech	<i>Fagus americana</i>	Yellow	May	Rich yellow*	★	30-60
6			★	★	★	★	80-100	40-60	Any	White ash	<i>Fraxinus americana</i>	Yellow	May	Yellow	★	40-50
7			★	★	★	★	60-80	60-80	Rich, moist	Walnut	<i>Juglans nigra</i>	Yellow-brown	May	Yellow-brown	★	60-75
8			★	★	★	★	20-30	20-30	Heavy	Flowering crab	<i>Malus floribunda</i>	Pink*	May	Yellow	★	15
9	★	★	★	★	★	★	80-100	60-80	Normal	Oriental plane	<i>Platanus orientalis</i>	White	June	Yellow	★	50
10	★	★	★	★	★	★	80-120	80-100	Normal	Black cherry	<i>Prunus serotina</i>	White	June	Purple-brown*	★	60-80
11	★	★	★	★	★	★	80-100	80-100	Normal	White oak	<i>Quercus alba</i>	Scarlet*	June	Scarlet*	★	40-60
12		★	★	★	★	★	60-80	50-60	Light	Scarlet oak	<i>Quercus coccinea</i>	Scarlet*	June	Red*	★	60-80
13			★	★	★	★	80-125	80-100	Normal	Red oak	<i>Quercus rubra</i>	Yellow	July	Yellow	★	30-50
14		★	★	★	★	★	50-75	40-60	Rich	Littleleaf European linden	<i>Tilia cordata</i>	Cream-white	July	Yellow-brown	★	60-80
15	★	★	★	★	★	★	100-150	70-100	Normal, rich	American elm	<i>Ulmus americana</i>	Yellow	July	Yellow-brown	★	60-80

HOW TO USE THE TREE, SHRUB, AND VINE TABLES

Study your planting problem on the ground. Determine what you want to do, the effect desired, and the exact places where plants are needed. Note size in height and spread that plants should attain in relation to size of property, house, corners, doors, windows, foundations, and so forth. Note the soil, moisture, and light conditions.

Solve each part of the problem separately; that is, shade tree for porch, front doorway planting, corner of porch, vine for arbor, and so forth.

Check on the table the particular problem involved. Note the plants advised for this as indicated by the heavy black mark and check those that are correct in size and that will be satisfactory in the particular soil, moisture, and light condition. This will reduce the number of plants usable to a small group. Check the names of these. Any of them will be satisfactory.

Now make your final selection by comparing the flower value, the time of bloom, the fall and winter effect, and the like.

SHRUB PLANTING TABLE

Note.—Stars indicate that the effect is unusually fine
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Key number	Foundations	Corners — angles	Accent at steps, doorway, or walk	Groups	For front edges of	Borders	Screens	Hedges	Height (feet)	Spread (feet)	Soil	Moisture	Light	Common name
1	+				+				1-2	1-3	Light.....	Dry.....	Sun.....	New Jersey tea
2	+				+				1-2	Any.	Any.....	Wet or dry.....	Sun.....	Shrubby cinquefoil
3	+				+				1-2	2-3	Any, clay.....	Normal.....	Part shade to sun.....	Virginia rose
4	+				+				1-2	2-3	Any.....	Normal.....	Shade to sun.....	Bunaula spiraea
5	+				+			+	1-2	2-3	Any.....	Normal.....	Part shade to sun.....	Anthony waterer spiraea
6	+				+				1-2	2-3	Any.....	Normal.....	Sun.....	Dwarf white spiraea
7	+				+				2-3	2-3	Light.....	Dry.....	Sun.....	Sweet fern
8	+				+				2-3	2-3	Clay, loam.....	Dry or normal.....	Sun.....	February daphne
9	+		+	+	+			+	2-3	2-3	Any.....	Normal.....	Sun.....	Slender deutzia
10	+				+				2-3	2-3	Any.....	Normal.....	Shade or sun.....	Coralberry
11	+		+		+				2-3	2-3	Any.....	Wet or dry.....	Sun.....	Red chokeberry
12	+				+				3-4	3-4	Any.....	Normal.....	Sun.....	Golden St. Johns wort
13	+				+				3-4	3-4	Clay.....	Normal.....	Sun.....	Rugosa rose
14	+				+				3-4	3-4	Any.....	Normal.....	Sun.....	Thunberg spiraea
15	+	+			+				3-4	3-4	Any.....	Normal.....	Shade or sun.....	Snowberry
16	+				+				3-4	3-4	Rich loam.....	Dry.....	Dense shade or sun.....	Maple-leaf viburnum
17	+		+		+			+	3-5	4-6	Any.....	Normal.....	Part shade to sun.....	Japanese barberry
18	+				+				3-5	3-4	Any.....	Normal.....	Part shade to sun.....	Lemoine's deutzia
19	+				+				3-5	4-8	Any.....	Dry.....	Sun.....	Fragrant sumac
20	+				+				3-6	4-5	Any.....	Normal.....	Sun.....	Yellow kerria
21	+				+				4-6	4-9	Any.....	Normal.....	Sun.....	Jetbead
22	+		+		+			+	4-6	4-7	Any.....	Normal.....	Sun.....	Van Houtte's spiraea
23	+				+				4-8	3-6	Any.....	Wet or dry.....	Part shade to sun.....	Grey stem dogwood
24	+				+				4-8	4-8	Any.....	Wet or dry.....	Part shade to sun.....	Red stem dogwood
25	+				+			+	4-8	5-8	Any.....	Normal.....	Part shade to sun.....	Regel's privet
26	+				+				4-8	4-8	Light.....	Wet or dry.....	Sun.....	Bayberry
27	+				+				5-8	6-8	Any.....	Moist or dry.....	Shade or sun.....	Weeping forsythia
28	+				+				5-8	6-8	Clay or loam.....	Normal.....	Sun.....	Michigan rose
29	+		+		+			+	6-9	8-12	Any.....	Wet or dry.....	Shade or sun.....	Arrowwood
30	+				+				8-12	8-12	Any.....	Normal.....	Part shade or sun.....	Japanese snowball
31	+				+				6-7	8-12	Any.....	Normal.....	Part shade or sun.....	Morrow's bush honeysuckle
32	+				+			+	8-12	5-7	Any.....	Normal.....	Shade or sun.....	English privet
33	+				+				8-12	5-7	Any.....	Normal.....	Shade or sun.....	Tartarian bush honeysuckle
34	+				+				8-12	5-8	Any.....	Normal.....	Part shade or sun.....	Sweet mock orange
35	+				+				8-12	8-12	Any.....	Normal.....	Light shade or sun.....	Wayfaring-tree
36	+				+				8-12	8-10	Any.....	Normal.....	Dense shade or sun.....	Witch-hazel
37	+				+				9-14	8-10	Any.....	Normal.....	Sun.....	Persian lilac
38	+		+		+			+	10-14	8-10	Any.....	Normal.....	Light shade or sun.....	Cornelian cherry
39	+				+				10-14	8-10	Any.....	Normal.....	Part shade or sun.....	Shadbush
40	+	+		+	+			+	10-20	8-10	Rich.....	Normal.....	Sun.....	Hawthorn
											Clay.....	Normal.....		
41	+	+	+	+	+			+	5-35	3-15	Heavy.....	Wet or dry.....	Shade or sun.....	Use chiefly as accent at corners and doors.
42	+	+	+	+	+			+	5-40	3-30	Light.....	Dry.....	Sun.....	White cedar
43	+	+	+	+	+			+	8-120	8-70	Rich.....	Normal.....	Shade.....	Hemlock

These evergreens may be used as shrubs.

Clip the foliage to keep them the desired size.

Note.— Stars indicate that the effect is unusually fine

Key number	Scientific name	Flowers	Time of bloom	Fall effect	Winter effect	Place found wild	Attracts birds	Distance apart to plant
1	<i>Ceanothus americanus</i>	White *	July.....	Yellow.....	Seeds, brown.....	Open hillslopes.....	.....	2
2	<i>Potentilla fruticosa</i>	Yellow.....	June-July.....	Yellow.....	Stems, seeds.....	Swamp edges.....	.....	1
3	<i>Rosa lucida</i>	Pink.....	June.....	Red.....	Red twigs-berries *	Fields, open woods.....	.....	2
4	<i>Spiraea bumalda</i>	Red.....	July.....	Brown, yellow.....	Brown stems.....	Brown stems.....	.....	2
5	<i>Sp. bumalda</i> Anthony Waterer.....	Red.....	July.....	Brown, yellow.....	Brown stems.....	Brown stems.....	.....	2
6	<i>Sp. japonica</i> alta.....	White.....	July.....	Green.....	Leaves, stems.....	Open land.....	.....	2
7	<i>Comptonia asplenifolia</i>	Yellow.....	May-June.....	Yellow, red fruits.....	Brown stems.....	Open slopes.....	.....	2
8	<i>Daphne mezereum</i>	White *	March.....	Yellow.....	Brown stems.....	Open slopes.....	.....	2
9	<i>Dentzia gracilis</i>	Pink.....	August.....	Brown.....	Dull-red berries *	Swamps.....	.....	2
10	<i>Symphoricarpos vulgaris</i>	White.....	May.....	Red *.....	Brown stems.....	Swamps.....	.....	2
11	<i>Aronia arbutifolia</i>	White.....	July-August.....	Brown.....	Brown stems *	Swamps.....	.....	2
12	<i>Hypericum aureum</i>	White.....	July-August.....	Yellow.....	Red fruit.....	.....	.....	2
13	<i>Rosa rugosa</i>	White, pink, red *	May-July.....	Yellow.....	Pale brown stems *	.....	.....	3
14	<i>Spiraea thunbergii</i>	White.....	May.....	Yellow.....	White berries.....	.....	.....	3
15	<i>Symphoricarpos racemosa</i>	White.....	July.....	Bronze, red *.....	Black seeds.....	Woods.....	.....	3
16	<i>Viburnum acerifolium</i>	Cream.....	June.....	Orange-red *.....	Brown stems, red berries *.....	.....	.....	3
17	<i>Berberis thunbergii</i>	Yellow.....	May.....	Yellow.....	Brown stems.....	.....	.....	3
18	<i>Dentzia lemoinei</i>	White *	May.....	Yellow.....	Brown stems.....	.....	.....	3
19	<i>Rhus canadensis</i>	Yellow.....	April.....	Orange, red *.....	Brown-red fruits.....	Dry banks.....	.....	4
20	<i>Keria japonica</i>	Yellow.....	May.....	Yellow.....	Green stems *.....	.....	.....	3
21	<i>Rhodotypos kerrioides</i>	White.....	May.....	Yellow.....	Black seeds.....	.....	.....	4
22	<i>Spiraea van houttei</i>	White *	May.....	Yellow.....	Brown stems *.....	.....	.....	4
23	<i>Cornus paniculata</i>	Cream.....	June.....	Bronze, purple *.....	White * fruit, grey stems *.....	.....	.....	4
24	<i>Cornus stolonifera</i>	Cream.....	June.....	Red.....	Blue-white fruit, red stems *.....	Open land.....	.....	3
25	<i>Ligustrum ibota regelianum</i>	White.....	June.....	Bronze, red, green.....	Blue-black fruit.....	Wet land.....	.....	4
26	<i>Myrica carolinensis</i>	Greenish-yellow.....	May-June.....	Green, brown *.....	Silver-grey fruit.....	Sandy knolls, swamp.....	.....	4
27	<i>Forsythia suspensa</i>	Yellow *	April-May.....	Yellow, purple.....	Yellow stems.....	.....	.....	4
28	<i>Rosa setigera</i>	Pink *	July.....	Yellow.....	Orange-red fruit *.....	.....	.....	4
29	<i>Viburnum dentatum</i>	White *	June.....	Bronze, scarlet *.....	Black fruit, tan stems *.....	Swamps, open.....	.....	4
30	<i>Viburnum tomentosum plicatum</i>	White *	June.....	Bright red *.....	Tan-brown stems.....	Swamps, open.....	.....	4
31	<i>Lonicera morrowii</i>	Yellow.....	June.....	Red.....	Brown stems.....	.....	.....	5
32	<i>Ligustrum vulgare</i>	Cream.....	June.....	Green.....	Black fruit *.....	.....	.....	5
33	<i>Lonicera tartarica rubra</i>	Pink.....	May.....	Brown.....	Tan-cream stems.....	.....	.....	5
34	<i>Philadelphus coronarius</i>	White and yellow *	June-July.....	Green.....	Red-brown stems.....	.....	.....	6
35	<i>Viburnum lantana</i>	Cream.....	May-June.....	Green, blue, red fruit *.....	Brown stems.....	Woods, fields.....	.....	6
36	<i>Hamamelis virginiana</i>	Yellow *	Oct.-Dec.....	Yellow flowers *.....	Dark brown stems.....	.....	.....	6
37	<i>Syringa persica</i>	Lavender *.....	May-June.....	Yellow-brown.....	Brown stems.....	.....	.....	6
38	<i>Cornus mas</i>	Yellow *	March-April.....	Red-orange *.....	Brown stems.....	.....	.....	6
39	<i>Amelanchier canadensis</i>	White *	April.....	Yellow.....	Grey stems.....	Woodland.....	.....	6
40	<i>Crataegus</i>	White *	May-June.....	Brown, yellow.....	Red fruit, grey stem *.....	Open land.....	.....	8
These evergreens may be used as shrubs. Clip the foliage to keep them the desired size. Use chiefly as accent at corners and doors								
41	<i>Thuja occidentalis</i>.....	.....	.....	Evergreen *.....	Evergreen *.....	Wet places.....	.....	3-6
42	<i>Juniperus virginiana</i>.....	.....	.....	Evergreen *.....	Evergreen *.....	Gravel land.....	.....	3-6
43	<i>Suga canadensis</i>.....	.....	.....	Evergreen *.....	Evergreen *.....	Woodland.....	.....	6-10

VINE PLANTING TABLE

Key number	Ground cover	Bank covering	Foundation walls	Brick, stone	Stucco	Porch	Arbors	Fences	Light shade	Heavy shade	Soil	Common name	Scientific name	Flower	Time of bloom	Fruit	Winter effect	Hardiness
1									*	*	Sand or clay	Tara vine	<i>Actinidia arguta</i>	White	May-June	Yellowish, edible		Slightly tender
2									*	*	Normal or clay	Akebia	<i>Akebia quinata</i>	Chocolate	June	Dark purple		Hardy
3									*	*	Light to normal	Virginia creeper	<i>Ampelopsis quinquefolia</i>	Yellow-green		Blue		Hardy
4									*	*	Any	Boston ivy	<i>Ampelopsis veitchii</i>	Yellow-green		Blue-black		Hardy
5									*	*	Normal	Dutchman's pipe	<i>Aristolochia sipho</i>	Purplish	June-July			Slightly tender
6									*	*	Light	Bittersweet	<i>Celastrus scandens</i>	Yellow	June	Orange, yellow*		Hardy
7									*	*	Normal	Japanese clematis	<i>Clematis paniculata</i>	White*	Sept.-Oct.	White		Hardy
8									*	*	Normal	Winter creeper	<i>Evonymus radicans</i>	Yellow-green		Orange, yellow*		Hardy
9									*	*	Normal	English ivy	<i>Hedera helix</i>	Yellow-green				Tender north
10									*	*	Rich	Climbing hydrangea	<i>Hydrangea petiolaris</i>	White*	June			Hardy
11									*	*	Any	Honeysuckle	<i>Lonicera japonica</i>	White, yellow*	June-Aug.	Brown leaves		Tender north
12									*	*	Normal	Silver fleecyvine	<i>Polygonum baldschanicum</i>	Rose or white*	Aug.			Top kills back
13									*	*	Normal	Trumpet creeper	<i>Tecoma radicans</i>	Orange-red	June-July			Tender north
14									*	*	Light	Grapes (many varieties)	<i>Vitis</i>	Yellow-green		Edible		Tender north
15									*	*	Heavy	Wisteria	<i>Wisteria chinensis</i>	White, lavender*	May			Hardy
16									*	*	Rich clay	Climbing rose	<i>Aviator Wright</i>	Yellow-double*	June-July			Protect north
17									*	*	Rich clay	Climbing rose	<i>Gardenia</i>	Yellow-single*	June			Protect north
18									*	*	Rich clay	Climbing rose	<i>Climbing America beauty</i>	Pink-double*	June			Protect north
19									*	*	Rich clay	Climbing rose	<i>Dorothy Perkins</i>	Pink-single*	June			Hardy
20									*	*	Rich clay	Climbing rose	<i>Paul's scarlet climber</i>	Red-double*	June			Hardy
21									*	*	Rich clay	Climbing rose	<i>White Dorothy</i>	White-semi-double*	June			Hardy

Note — Stars indicate that the effect is unusually fine
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Kind of trees to plant

The tree-planting table (page 21) will assist you in selecting the trees to use. In setting roadside trees the variety should be the same as that already planted along your street. This makes for uniformity and gives a better appearance to the highway. It is perfectly all right to have your lawn trees different from the varieties planted by your neighbors.

Where to get trees

The sapling trees can be obtained from three sources. They can be purchased from the local nurseryman, collected in the woods, or grown from seed by the individual. Purchased trees are the best as they have received special care in the nursery, have good root systems, and are of the correct size. Go to the local nurseryman and tell him about your project. He will be able to help you and can sell you good trees at a cost of from 50 cents to \$2 each.

Transplanting trees from the woods

If you live in the country and have trees growing along your own woodland or if you can get them from a neighbor with his permission (and you must be sure to obtain this first), you may be successful in transplanting some of the wild ones. In transplanting wild trees there are several important things to keep in mind. Do not select trees that are too large. Those with trunks larger in diameter than one or one and one-half inches at the height of your chest are too big to move easily. If possible, pick out trees that grow in the open, not in the woods, and be sure that there is not too much brush or stone on or in the ground to make the digging difficult.

The best time to select the wild trees is during the summer when their leaves make it easier to recognize them. When you go out to find them, take along several strips of white cloth about two inches wide and eighteen inches long. After you have decided upon a certain tree, tie one of these strips to the trunk or to a limb in a prominent place so that you will be able to recognize your tree again when the favorable time for transplanting it arrives. It is quite important to do this and to tie it very firmly, as birds, mice, and squirrels sometimes try to steal the cloth with which to build their nests.

If you are going to do any transplanting, it will pay well to do it carefully so that your efforts will be rewarded by success. The first consideration will be that of obtaining roots. Without these the tree cannot survive. Therefore, dig carefully, using a pick to loosen the soil, and, after the roots are partly uncovered, throw out the dirt with the shovel. Get all the roots you can, taking care not to break them or to strip their bark. Do not start the hole too close to the trunk, but several feet out on

all sides. Loosen all the roots before you try to tip the tree over or pull it out of the hole. You will need several pieces of old burlap sacking. These must be wet and the roots should be wrapped up in them to prevent their getting dry. If the roots dry out, the tree will die. Keep them moist and move the tree quickly to its new position. It is better to move one tree at a time and get it planted before attempting the next.

Season for transplanting trees

The best time for transplanting trees is either in the early spring just as soon as one can easily dig in the soil or else in the fall. Fall planting is done as soon as the leaves turn color or after the first frost has come. It is difficult to set actual dates, but roughly the planting season is as follows: spring, April 15 to June 1; fall, September 20 to November 10.

Preparation of holes for trees

Before digging your tree, excavate a generous hole where you have placed the stake. Make this plenty large enough so that the roots may be spread out carefully. Best results will be obtained if several shovel-fuls of well-rotted stable manure are dug into the soil at the bottom of the hole. Obtain a wheelbarrowful of rich garden soil with which to cover the roots if the soil that comes out of the hole is poor.

Planting the tree

You are now ready to set your tree. See that it stands upright, at the same depth in the hole as it formerly stood, and that all the roots are spread out as they naturally grew. Cut off broken and seriously injured roots. Cover the roots with loose soil and work it well down into them. This may be done by shaking the tree gently. Tramp this layer down firmly. No air spaces should be allowed and the soil must be packed hard against every root. Now, if it happens that the soil is very dry or that the roots are dry, one-half a bucket of water may be poured into the hole. If the soil is moist and the roots are in good condition, this is not necessary. The hole may then be filled with the remaining dirt, but it is very important that it be packed down hard. One can use an old fence post or a piece of 2x4-inch timber to tamp the ground down. Never fill the hole so full that the soil is rounded up about the plant, but rather leave a saucer-shaped depression about its trunk. This will allow a little extra water to gather about it during the rains that follow.

Pruning the tree

One other thing must be done before success is assured. The top of the tree must be pruned. In transplanting, many of the roots are lost. Those that remain are not sufficient to feed the original top. Cut back all of the branches to within a few inches of the main trunk. At least one-

third or more of the branches must be cut off if the tree is to grow satisfactorily. Do not try to break them but cut them off clean, using a sharp knife or a pair of pruning shears.

Nature will now take care of your tree and reward your efforts. There is only one other thing that you can do to help it along. A layer of manure or decayed leaves placed on the ground about it will conserve moisture during the dry weather and afford the tree an increased food supply.

If these directions are carefully followed, there is no reason why your work should not be entirely successful and your tree grow to give you and others pleasure and happiness.

Shrub planting

Shrubs are the clothing with which the house is dressed. When properly placed, they enhance its beauty by taking away its bareness and softening its stiff formal lines. To do this they must be located close to the building. Never plant shrubs in the middle of the lawn.

Where to plant

A study of the sketches in figures 15 and 16 will give you a good idea as to where shrubs should be planted and how they should be grouped together. The numbers refer to the shrub table and indicate the kind of plant used. Single plants or groups may be planted at the following places:

On either side of the entrance doors.

At the corners of the house.

Against the chimney.

Along the porch or house foundation if these are higher than eighteen inches above the ground.

In front of the woodshed, chicken house, or other out buildings. Here they may screen an objectionable view and provide in its place a beautiful sight.

Along the property or fence line. In this position they form a border or boundary planting, giving privacy and added interest to the grounds within.

In groups at the entrance walk or drives.

How to arrange groups

Place the tallest plants against the heaviest corners of the building. Use the showier and more conspicuous kinds for accent on either side of the main entrance steps or doorway. Low-growing kinds should be planted in front of the tall ones to thicken the groups and to cover the bare stems at the base of the taller varieties. Allow plenty of room for each plant to grow without injuring or crowding its neighbor. Study

carefully the size to which the shrub will grow and make sure that it will fit the place in which it is to be planted.

Selection of shrubs

Practically all of our shrubs have attractive flowers, but flowers are not the first consideration. Those varieties that provide a beautiful effect during the entire twelve months are the best. They give us the most return for our work. It is particularly desirable to select those that will be beautiful during the cold, bleak winter months. In addition to flowers we must consider the spring and summer foliage, the fall color of the leaves, the berries or fruit that produce color and beauty during the fall and winter, the density of the twigs and stems and their color for the production of winter effects. In the shrub table these points are carefully noted.

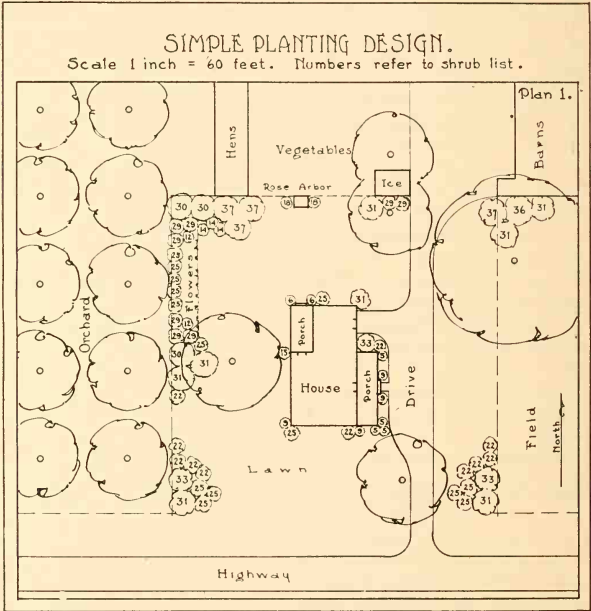


FIGURE 15

SIMPLE PLANTING DESIGNS.

Scale 1 inch = 40 feet. Numbers refer to shrub list.

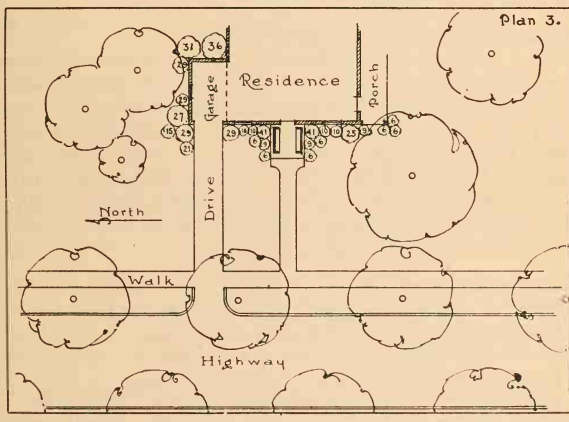
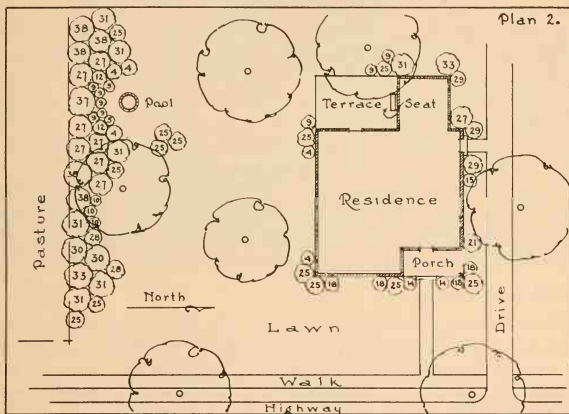


FIGURE 16

Plants for shady places

The question of shade is important. Many plants will die in dense shade, while others will tolerate only partial shade. If your location is shady, select those shrubs listed in the table under the heading *Light*, those that will endure shade. In addition, it is important to see that the soil in which they are planted is well enriched by the addition of large quantities of decayed manure or rotted leaves.

Sources of shrub material

Plants raised in the nursery are the best but many fine shrubs may be collected in the swampy places, along the edges of the woods, and from brush-grown fields and pastures. These can, and should, be used by those who are fortunate enough to possess them. If dug with care and severely pruned back, they will transplant safely and grow to be even more beautiful than they appear in their native habitat.

Kinds of shrubs to use

The shrub-planting table (pages 22 and 23) will help in selecting plants. This is a selected list and includes many of the best shrubs. Others may be selected from nurserymen's catalogs. Azaleas, laurel, and other evergreens have not been included because of the special problems in transplanting and growing them successfully.

Preparation of ground and planting of shrubs

All of the plants included in the shrub table and almost all nursery-grown shrubbery will grow well in a normal rich soil. Rotted manure or leaves dug into the soil will always produce better results.

Dig holes amply large and spread roots carefully after cutting off broken or seriously injured parts. Use the best soil available directly beneath and about the roots. Be sure that the shrubs stand upright in the hole. Stamp down the soil in layers and when the hole is half full add one-fourth pail of water. Continue filling the hole and pack the soil down hard. Never mound it up about the bush.

Proper spacing of plants

Vines (on wall or arbor) from 5 to 10 feet apart.

Low shrubs (from 1 to 2 feet high) 2 feet apart.

Small shrubs (from 3 to 5 feet high) 4 feet apart.

Medium shrubs (from 6 to 8 feet high) 6 feet apart.

Large shrubs (from 10 to 20 feet high) from 8 to 12 feet apart.

When shrubs are planted to screen from sight some objectionable object, plant them only half as far apart as indicated.



FIGURE 17. PROPER PLANTING INCREASES THE HOME VALUE IN MANY WAYS

Pruning shrubbery

All shrubs should be pruned immediately on being planted. Use a sharp knife or pruning shears and cut the plants back from one-third to one-half. On all shrubs the weak and secondary branches should be removed entirely. Fully 90 per cent of all the plants that die are killed because the top was not properly pruned to balance the roots lost in digging.

Vines

Vines are nature's lacework. They are used to cover and dress bare walls, chimneys, and foundations. On fences, arbors, and porches, they may provide flowers, fruits, and shade.

All vines require a normally moist and rich soil, with the exception of the wisteria which will bloom best in less fertile ground.

The vine-planting table (page 24) will help you to select the best kinds for your purpose. Always purchase vines from the nurseryman.

Flowers and flower gardens

Flowers and flower gardens are discussed at length in one of the bulletins now available from the New York State College of Agriculture.² Those who are interested in simple flower gardens, including the best perennials and bulbs, should send for a copy of "The Flower Garden."

Attractive things to build for the back yard and the garden

Very few gardens are complete without some simple garden furnishings. Pools, arbors, bird baths, sun dials, and seats; these, and other

² The flower garden. By David Lumsden. Cornell Ext. Bul. 67. 1923.

features, add much to the charm of the home yard. Combining the sport of building them with their value in the garden and the relative cheapness of materials, they become one of the best projects for the boy or the girl. Any one of ordinary ability, with a few tools at hand, and a few cents for supplies, can produce excellent results. Accordingly, a few simple plans and directions for construction are included.

Garden seats

Gardens are places in which we should be able to pause and rest. Benches are, therefore, used and should be placed where they will command a good view of the garden or property. In addition, they should be under the shade of some friendly tree. In placing a garden seat make sure that it stands level.

The design illustrated in figure 18 is built from an ordinary 2x8-foot plank and a short scrap of 2x4-inch lumber. Wooden benches are the best and much the most comfortable to sit upon. They may be painted, stained, or simply allowed to assume the soft silver gray of the weathered wood. Any available kind of wood will do but cypress and white pine are best. If you are clever in the use of the key-hole saw, the curved-end design shown as an alternate end pattern may be attempted.

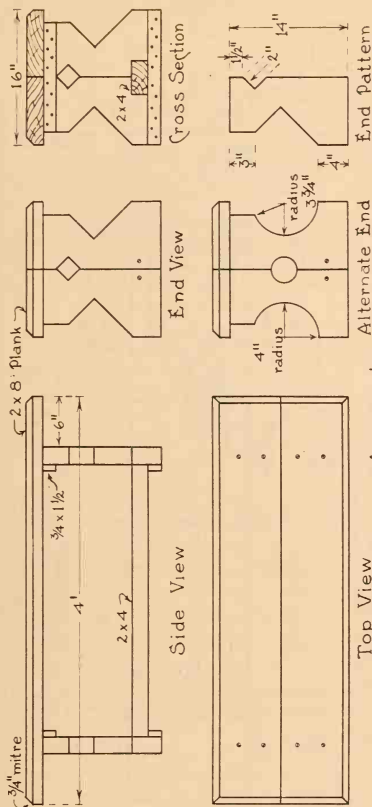
The seat shown in figure 19 is used in many of the state parks. Its sturdiness and naturalistic appearance make it satisfactory for use in such situations. The ease with which it may be built, together with the fact that the materials required for its construction can be easily obtained, should make it a popular piece for the informal garden or the shaded nook upon the lawn.

Rose arbors

The rose arbor is always popular. It not only is attractive with its bower of roses but also may become a nook for the garden bench or a gate to the garden. It should never stand in the middle of an open lawn but should always be placed in a fence or hedge line as a gate, or close to the property border, or against the garage where it becomes a shelter for the garden seat.

The design shown in figure 20 can be built of poles with either the bark left on or stripped off, or of 4x4-inch and 2x4-inch timbers. Locust and cedar are the best woods used for rustic work but anything handy may be utilized. In all cases the bottoms of the four upright posts that project into the ground should be coated with wood preservative, tar, or paint, to help them withstand decay. Sections of old field fencing or any heavy galvanized netting of large mesh with openings not less than two or three inches in diameter may be used on the sides and top. If this is painted with auto enamel or bridge paint, it will last for twenty years

GARDEN SEAT DESIGN.



Total cost about \$1.50

0 6" 1' 1 1/2' 2'

Scale 3/4 Inch Equals 1 Foot.

Top View

Materials

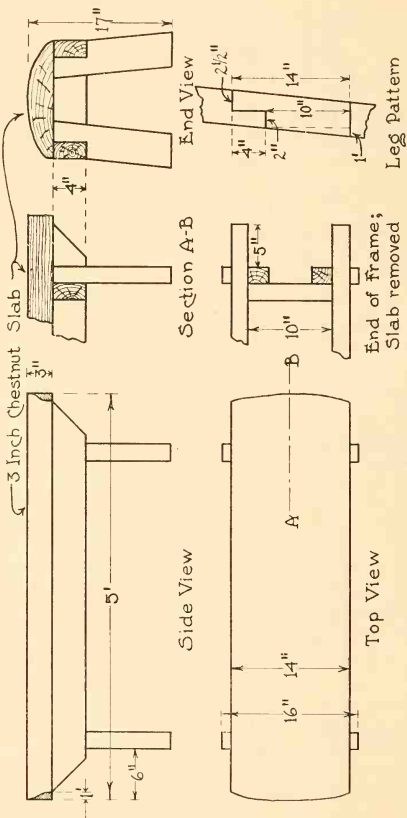
- 1 Plank 2 x 8 x 13 Feet
- 1 Piece 2 x 4 x 5 1/2 Feet
- 1 Piece 3/4 x 1 1/2 x 2 3/4 Feet
- 12 4 inch wood screws
- 24 10-penny finishing nails

Approximate Cost

- \$1.85
- .20
- .05
- .30
- .05

FIGURE 18

RUSTIC GARDEN SEAT.



Materials
 1 Piece 3 x 14 x 5 feet
 1 Piece 2 x 4 x 18 feet
 50 3 1/2" nails

Cost
 \$1.25
 .65
 .20

Total cost about \$2.00



Scale 3/4 Inch Equals 1 Foot.

FIGURE 19

RUSTIC ROSE ARBOR.

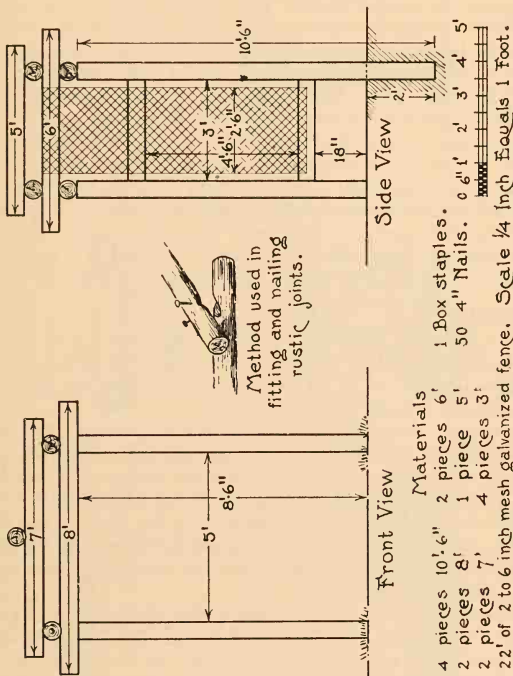


FIGURE 20

or more. The wire should cover both sides and should cross the top just above the first cross pieces.

In planting the rose arbor use one plant on either side, and the appearance is best if the same variety of rose or vine is used. Be sure to provide a bed of deep rich soil, using plenty of manure if roses are selected.

The simplest method of building and setting the arbor is first to cut the wood the desired lengths. Next dig the holes for the posts, making them extra large. The two posts are then fastened together with the two side braces and set in the holes. The front and rear cross pieces are then nailed in place. It must then be made to stand level. Use a builder's level upon the side and front cross pieces and place stones under the ends of the posts to make the arbor level. Next, be sure the posts are the same distance apart at the ground as they are at the top. The holes may then be filled up with small stones, cinders, concrete, or dirt, and the filler tamped down firmly about them. The remaining top pieces may then be nailed in place and the netting stretched evenly and tightly.

If timber is used, as in the case of the garden seat, it may be allowed to assume the natural weathered color of the wood or it may be stained or painted. If the latter is done, use soft shades of brown or olive-green.

Bird baths

The bird bath is a most attractive feature, worthy of much wider usage. It is not alone charming in itself but does attract the desirable birds to our back yards. What a happy sight to see them there and how delightful to hear their cheery songs!

Bird baths should be placed in conspicuous positions where they may be watched from the house windows, the porch, or the garden seat. No shrubs, tall flowers, or other dense material which might provide a hiding place for cats should be within ten feet of the bird baths.

The first bath illustrated in figure 21 is the cheapest and easiest to build. It is satisfactory in every way and will be used by the birds even more than the costly purchased types and those that stand upon high pedestals.

An old garbage-can cover, one-fourth pint of bright blue or green auto enamel, and a brush are all the material required. Give the cover or pan two coats of enamel both inside and out. It is then set in a shallow excavation in the lawn, flush with the grass, and filled with clear water. Greater charm is added to the effect if a few low-growing plants, such as violets, forget-me-nots, or ferns, are planted about its rim. The blue or green paint assists in reflecting the sky and giving color to the surface of the water.

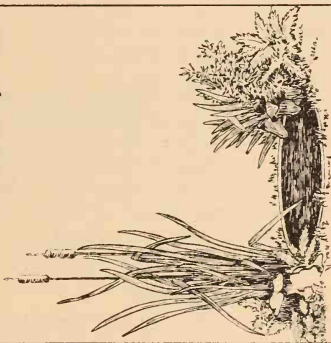
Another bird bath easy to build and which will equal the expensive stone features in attractiveness is constructed of an old six-inch sewer tile

THREE SIMPLE BIRD BATHS.

An old garbage can cover

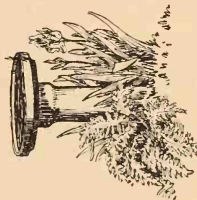


sunk in the ground.

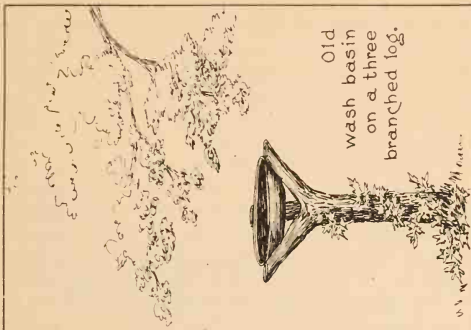


Wildflowers perfect its beauty.

18" flower pot saucer
6" sewer tile.



Ferns and Iris.



Old
wash basin
on a three
branched log.

A vine decorates the base.

FIGURE 21

and a sixteen- or eighteen-inch flower-pot saucer. The details of its construction are given in figure 21. The important consideration in erecting this fountain is to have it stand firm and level upon a solid base. This is best done by excavating a hole roughly sixteen inches deep and ten inches square. This is filled with a mixture of concrete and while still soft the tile is set, small end down, upon the concrete. The saucer is then set upon the top of the tile and filled with water. The tile may then be made to stand level by noting the water line along the edge of the saucer and by gently forcing the tile into the soft cement on the higher side. Next remove the saucer and throw into the tile a few trowelfulls of cement. Tamp this down gently with a stick and allow the cement to harden. The tile is then held firmly upon its base. The appearance may then be materially improved by painting both the tile and the saucer in a soft rich brown, olive green, or gray tone. If the inside of the saucer is painted bright green or blue, it will reflect the light on the water. In winter turn the saucer upside down on top of the tile. Ferns, flowers, or English ivy may be planted about the base of the tile.

Another good type of pedestal bird bath can be built of an old wooden chopping bowl, a milk pan, or another tin, set upon a stump or on a section of a tree trunk. A suggestion for this is shown in figure 21. This is a three branched tree from four to six inches in diameter and four feet high, set upright in the ground, and the bowl inserted in the crotch of the branches. An afternoon's search of the woodland will reveal such a tree growth. Be sure not to trim the three branches off too close to the joint. Cut them off flush with the top of the bowl after the bowl has been set in place. If the pan or bowl is deeper than one and one-half inches, place some flat stones in the bottom. Birds cannot bathe in water deeper than one or at most one and one-half inches. Paint both inside and outside of a metal container as explained under the directions for building the bath first described.

A variation of the rustic bird bath (figure 21) is shown as figure 22. In this case a low box holds the pan of water. This is mounted on top of a section of tree trunk and held firmly in place by the four corner braces. If bits of slab-wood with the bark still adhering are used for the sides of the box and rustic branches are used for the pedestal and the braces, the effect is most pleasant. The size of the box will depend upon the size of the pan available. The pan should fit snugly into the box, and the corners should be filled with gravel or coarse sand.

A water garden and a lily pool

The easy culture, quick results, and wonderful beauty of water lilies are fast making their charms a necessity in every garden. The culture is

A SIMPLE RUSTIC BIRD BATH.

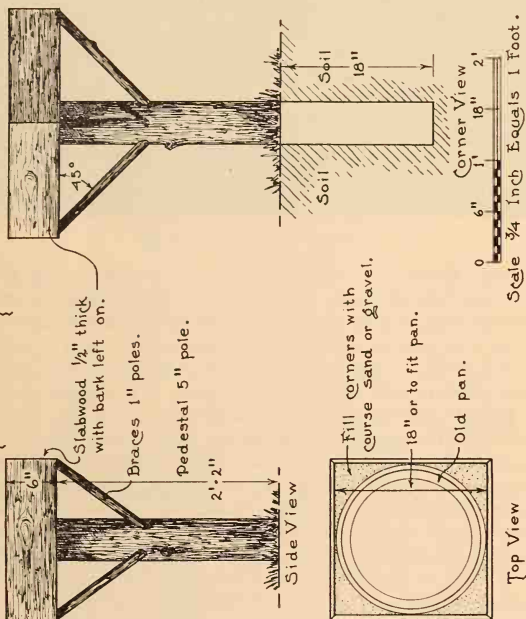


FIGURE 22

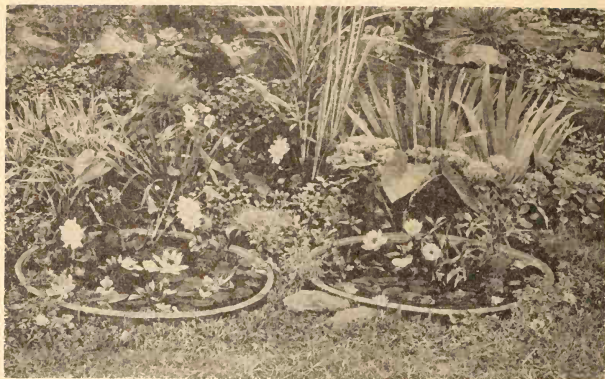


FIGURE 23. BARRELS OF BEAUTY

extremely simple, for three things only are essential to their growth—sun, water, and good soil. Nature will supply the first, the second is easily procured, and the third can be supplied with little trouble.

Your first attempt at a water-garden may well be made in one or two half-barrels (figure 23). Any water-tight box may be used but an old barrel sawed in half makes a splendid pool. These should be sunk in the ground almost to the rim and should be two feet deep (figure 24). This allows for one foot of soil and one foot of water, the ideal condition for most water lilies and aquatic plants. Except in formal gardens it is desirable to make the pool and its setting as naturalistic as possible. A few clumps of moisture-loving plants, such as iris, forget-me-nots, cardinal flower, turtle-head, ferns and oramental grasses, help to make a naturalistic and pleasing frame for the loveliest of all, the water lilies.

The best soil obtainable is none too good. An excellent soil can be prepared by mixing three parts of good garden soil or rotted sod with one part of well-rotted cow manure. Unless the manure is very old and well rotted, it will ferment and discolor the water. Ground bone, which can be procured at any seed or farmers' supply store, can be substituted for the manure. The proportion to use would be one quart of bone to one bushel of soil, and this is sufficient for one half-barrel. The soil in the barrel should be one foot deep.

The beginner should use only the hardy lilies. These can be left out over winter if the top of the barrel is covered with a few boards or a

THE BARREL LILY POOL.

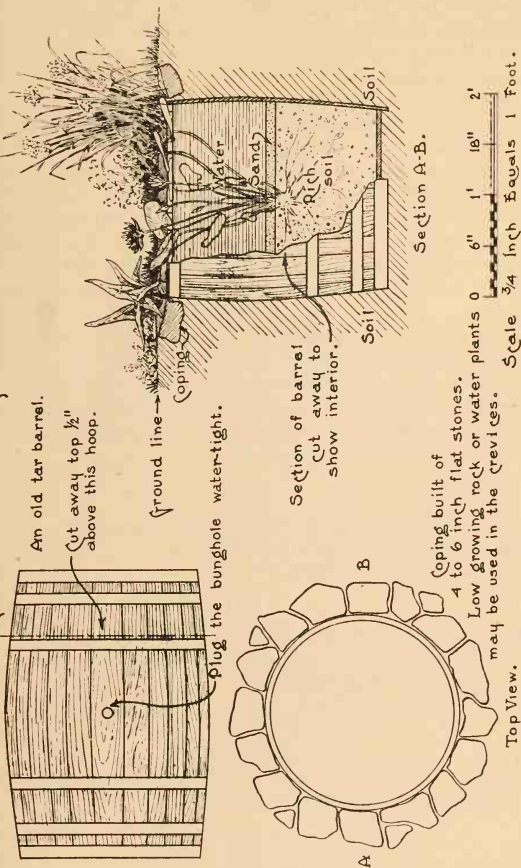


FIGURE 24

cover. Over this should be placed a thick layer of leaves or straw. Branches of trees or a square of netting can be used to prevent this material from blowing away. With such a covering the roots will not freeze and the greater trouble of taking up the roots and storing them over winter is obviated.

Use only one lily root for each barrel. Plant the last of May or in early June. Set the root carefully, deep in the soil, then cover the soil with about one inch of clean sand. This prevents the discoloration of the water by the soil. Introduce the water very slowly and gently so as not to disturb either sand or soil. All that is necessary, after the pool is once filled, is the replenishing of the water that has evaporated. An occasional spraying in the late afternoon will supply such and will wash the dust or insects from the leaves. Sometimes mosquitoes breed in these pools. A few goldfish introduced into each will effectually remedy this danger.

In these back-yard pools our common wild water lily can be planted and grown successfully. The nurseryman and those who specialize in water-plants can supply other sorts and many lovely shades of color. These vary greatly in price but perfectly marvelous flowers may be purchased at reasonable prices. A few of the less expensive but excellent lilies are suggested in the following list:

WHITE

Alba candidissima—large flowers, early and free bloomer.

Gladstoniana—large flowers; dazzling white.

Odorata—the wild pond-lily.

PINK

Marliacea carnea—soft flesh pink; large flowers.

Odorata, W. B. Shaw—rose pink; very fragrant, large flowers.

Tuberosa rosea—exquisite pink.

William Doogue—shell pink; fragrant, continuous bloomer.

LAVENDER

Laydekeri lilacea—rosy lilac, shaded bright carmine; tea-rose fragrance; very desirable for tub culture.

RED

Marliacea rosea—flowers large, deep rose.

Odorata exquisita—intense rose-carmine.

Froebelii—dark red; free-flowered.

YELLOW

Marliacea chromatella—bright canary yellow.

Odorata sulphurea—sulfur yellow.

DWARF LILIES:

WHITE

Pygmaea—the smallest lily; extra fine for tub culture.

YELLOW

Pygmaea helvola—very free-flowering; dainty and ideal for tub culture

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